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Political leadership, climate policy, and renewable energy

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Martinez-Alvarez et al. (1) conclude that the impact of political leaders on carbon pricing has been limited. Their study has, however, two serious shortcomings: 1) It excludes the 6-y period since the Paris Agreement entered into force (on 4 November 2016), during which many jurisdictions implemented or strengthened carbon pricing; and 2) it limits itself to gasoline taxes while not accounting for genuine carbon pricing, notably applied to large industrial emitters. Among others, it ignores the European Union's emissions-trading system (EU-ETS), the most successful carbon-pricing instrument worldwide, with a price fluctuating around 80€/TCO$_2$ since early 2021. In effect, the study focuses on emissions of fossil-fuel use by transport, representing only some 15% of global emissions. Moreover, since general fuel taxes are not proportional to carbon content of fuels, they provide an inaccurate incentive for CO_2 emissions reduction. Finally, the study's use of ordinary least squares may have biased its results as it is sensitive to outliers—visible in the plots of average monthly changes in fuel taxes (Supporting Information). The literature suggests using least absolute deviation or quantile regression as these avoid assumptions of homoscedasticity and normally distributed errors. Altogether, the pessimistic policy conclusion rests upon feeble grounds.

Next, the authors' advice is to shift the policy focus to subsidies for renewable energy. This is unconvincing as they did not undertake a comparable analysis for such subsidies while five substantive arguments plead against them. First, the pace of renewable-energy diffusion will be insufficient to meet the Paris targets without major changes in production and consumption structures (2). Second, renewables' infrastructure requires considerable fossil-fuel inputs that will contribute to CO_2 emissions (3). Third, production-related emissions of renewables differ between technologies and countries (4). Since without carbon pricing their sales prices will not reflect such differences, users are not encouraged to minimize life-cycle emissions. Fourth, studies show that carbon pricing is more effective in both encouraging renewables and reducing net emissions (5). Fifth, subsidies promote energy/carbon rebound, estimated at the macroscale to equal possibly 50 to 100% (6). Carbon pricing appears to be the only effective way to limit rebound (7). Given these considerations, it is hardly surprising that historical absence of carbon pricing resulted in low-carbon sources displacing only one-tenth of fossil-fuel-generated electricity (8).

Renewable subsidies are thus a far cry from effective climate policy. The fundamental reason is that climate solutions are prone to free riding: Sacrifices are (perceived as) large, while gains are uncertain, small, and delayed—for both individuals and countries. The EU-ETS demonstrates that a supranational approach harmonizing national climate policies is the way forward to overcome free riding. The EU could invite the United States and China to join its ETS (9). This would simplify negotiations to only three partners—compared to almost 200 countries in post-Paris negotiations under auspices of the United Nations. The resulting China-EU-US climate club with a joint carbon price and border tariff might trigger a domino effect (10). Indeed, few countries would want to remain outside such a powerful club. This is arguably the most realistic scenario for solving climate change.

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